Smart Grid Regional Demonstrations						
HQ State	**HQ City**	**Name of Primary Awardee**	**Project Title and Brief Project Description**	**Project Locations**	**Recovery Act Funding**	**Total Project Value Including Cost Share**
CA	Los Angeles	Los Angeles Department of Water and Power	**Los Angeles Department of Water and Power Smart Grid Regional Demonstration Project** - In partnership with a consortium of local research institutions, deploy smart grid systems at partners' university campus properties and technology transfer laboratories. The demonstration projects will also include gathering data on how consumers use energy in a variety of systems, testing on the next generation of cybersecurity technologies, and how to integrate a significant number of plug-in hybrid electric vehicles onto the grid.	Los Angeles, CA	$60,280,000	$120,560,000
	Rosemead	Southern California Edison Company	**Irvine Smart Grid Demonstration** - Demonstrate an integrated, scalable Smart Grid system that includes all of the interlocking pieces of an end-to-end Smart Grid system - from the transmission and distribution systems to consumer applications like smart appliances and electric vehicles. The project will focus on the interoperability and interactions between technologies and systems working at the same time - such as communications networks, cyber-security requirements, and interoperability standards.	Irvine, CA	$40,134,700	$80,269,400
California					**$100,414,700**	**$200,829,400**
MA	Westwood	NSTAR Electric & Gas Corporation	**NSTAR Automated Meter Reading-Based Dynamic Pricing -**Develop and implement a Smart Grid pilot program that will examine technologies to leverage existing automated home meters to include dynamic electricity pricing for homeowners (ie, lower rates when demand is lower). By building on the existing meter infrastructure and broadband internet networks, utilities would be able to access some of the benefits of the Smart Grid - such as collecting data at meters at shortened intervals, communicating energy use data to consumers, direct load control, automatically reporting outages, etc. - while avoiding the full costs of implementing smart metering infrastrastructure or the costs associated with replacing meters prematurely.	Newton and Hopkington, MA	$2,362,000	$4,724,000
		NSTAR Electric & Gas Corporation	**NSTAR Urban Grid Monitoring and Renewables Integration**- Demonstrate the use of advanced sensors and monitoring instrumentation on low voltage (secondary) networks in downtown Boston to improve grid reliability and safety. The project will provide additional visibility for operators, which will increase the system's capacity to integrate on-site energy technologies, such as solar photovoltaic energy systems, plug-in hybrid electric vehicles or battery storage. Knowledge gained from this demonstration will lay the groundwork for the broad application of smart grid and on-site energy generation programs for secondary area network grids in large urban areas such as New York City, Philadelphia, Chicago and Los Angeles.	Boston, MA	$5,267,592	$10,535,184
Massachusetts					**$7,629,592**	**$15,259,184**
MO	Kansas City	Kansas City Power & Light Company	**KCP&L Green Impact Zone Smart Grid Demonstration -**Demonstrate an end-to-end Smart Grid that will include advanced renewable generation, storage resources, distribution system automation, in-home customer systems and digital technologies, and innovative rate structures. The programs will benefit about 14,000 commercial and residential consumers, while providing the critical energy infrastructure required to support an urban revitalization effort, Kansas City's Green Impact Zone.	Kansas City, MO	$23,940,112	$48,125,315
	St. Louis	The Boeing Company	**Project Boeing SGS: Demonstrating a Cyber Secure, Scalable, Interoperable, and Cost-Effective Smart Selection for Optimizing Regional Transmission System Operation -** Demonstrate an advanced Smart Grid software technology with military-grade cybersecurity for improving regional transmission system planning and operation. The project includes Regional Transmission Operators (RTOs) and utilities that collectively serve all or part of 21 states and more than 90 million people. The Boeing Smart Grid Solution (SGS) software is designed to be scalable, secure, and compatible with multiple systems to help RTOs and utilities improve grid reliability and efficiency.	St Louis, MO; Sunnyvale, CA; Huntington Beach, CA	$8,561,396	$17,172,844
Missouri					**$32,501,508**	**$65,298,159**
	New York	Consolidated Edison Company of New York, Inc.	**Secure Interoperable Open Smart Grid Demonstration in New York and New Jersey** Demonstrate a scalable, cost-effective smart grid prototype that promotes cyber security, reduces electricity demand and peak energy use, and increases reliability and energy efficiency. The system will include renewable energy generation, grid monitoring, electric vehicle charging stations, transmission automation, and consumer systems that will help expand the use of renewable energy and lead to greater consumer participation in the electricity system.	Ramsey, NJ; Spring Valley and Nyack, NY; New York, NY (Long Island City, Queens, lower Manhattan)	$45,388,291	$92,388,217

Smart Grid Regional Demonstrations

	HQ City	Name of Primary Awardee	Project Title and Brief Project Description	Project Locations	Recovery Act Funding	Total Project Value Including Cost Share
NY	Uniondale	Long Island Power Authority	**Long Island Smart Energy Corridor -** Partner with two branches of the State University of New York (SUNY) to create a Smart Energy Corridor along the Route 110 business corridor, involving 800 customers. The project will demonstrate the intergration of a suite of Smart Grid technologies on the distribution and consumer systems, such as smart meters, distribution automation, distributed energy resources, and electric vehicle charging stations. The projecct will also include testing cybersecurity systems, identifying the optimal combination of features to encourage consumer participation, and educating the public about the tools and techniques available with the Smart Grid.	Long Island, NY	$12,496,047	$25,293,735
	White Plains	Power Authority of the State of New York	**Evaluation of Instrumentation and Dynamic Thermal Ratings for Overhead Lines -** Demonstrate the effects that Dynamic Thermal Circuit Ratings (DTCR) technology can have on areas of the New York State transmission system where there is abundant wind generation potential. This project could result in a 5 to 15% increase in transmission line capacity to allow for more wind power, defering millions of dollars in capital expenditures on transmission projects an enabling improved situational awareness for gird operators.	Massena & Chateaugay, NY	$720,000	$1,440,000
New York					**$58,604,338**	**$119,121,952**
OH	Columbus	Columbus Southern Power Company (doing business as AEP Ohio)	**AEP Ohio gridSMART Demonstration Project -** Demonstrate a secure, interoperable and integrated smart grid infrastructure for 110,000 consumers in the state that will maximize distribution system efficiency and reliability and enable consumers to reduce their energy use and save money. The project will include 13 different technologies from the substation to the customer, including distribution automation and control, smart meters and appliances, home area networks, plug-in hybrid electric vehicles, energy and battery storage, and renewable generation sources. These technologies are estimated to improve the reliability and efficiency of the distribution system 30-40%.	Approximately half of the State of Ohio	$75,161,246	$150,322,492
Ohio					**$75,161,246**	**$150,322,492**
TX	Austin	Center for the Commercialization of Electric Technologies	**Technology Solutions for Wind Integration in ERCOT -** Manage the fluctuations in wind power in the large Elecvtric Reliability Council of Texas (ERCOT) transmission grid through better system monitoring capabilities, enhanced operator visualization, and improved load management. Project includes the installation of synchrophasors to enhance monitoring of grid conditions as variable wind resources move through the system, and the use of integrated Smart Grid technologies, including household and community battery storage, smart meters and appliances, plug-in hybrid electric vehicles, and homes equipped with 1-3 kW solar photovoltaics.	Houston, TX	$13,516,546	$27,419,424
		Pecan Street Project, Inc.	**The Pecan Street Project Energy Internet Demonstration -** Develop and implement an Energy Internet microgrid, located in a large mixed-use infill development site in Austin, Texas. This effort will build on Austin Energy's existing Smart Grid programs by creating a microgrid that will initially link 1,000 residential smart meters, 75 commercial meters, and plug-in electric vehicle chaging sites. The project will be implemented by a unique Texas not-for-profit corporation created to research, develop and implement smart grid clean energy systems.	Austin, TX	$10,403,570	$24,656,485
	Dallas	Oncor Electric Delivery Company, LLC	**Dynamic Line Rating Project** - Demonstrate the use of Dynamic Line Rating (DLR) monitoring technology to reduce transmission-line congestion and increase the carrying capacity of the transmission lines. The data and results from the demonstration project will help better understand DLR technologies, so that transmission systems can be utilized to their full capacity, decreasing congestion and deferring upgrades and additional construction.	Dallas, TX	$3,471,681	$7,279,166
Texas					**$27,391,797**	**$59,355,075**
VA	Arlington	National Rural Electric Cooperative Association	**Enhanced Demand and Distribution Manaagement Regional Demonstration -** Install and operate of a suite of diverse Smart Grid technologies and aggregate the data from 17 rural electric cooperatives across 10 states. Technologies will include over 130,000 meters, over 18,000 demand response switches, nearly 4,000 in-home displays or smart thermostats, and others. In addition to customer-focused technologies, the project will include voltage sensors and fault detectors. The demonstration data will be centralized for all sites and include studies on total demand, distributed energy resources, peak pricing, customer appliance control, and self-healing technologies for improved reliability.	Camp Point, IL; Friendship, WI; Osceola, IA; Marshalltown, IA; Humboldt, IA; Delhi, NY; Reynolds, GA; Lihue, HI; Petersburg, IL; Plymouth, NH; Elizabethtown, KY; Owentown, KY; Jacksonville, IL; Bardstown, KY; Covington, GA; Markle, IN; Franklinton, LA	$33,932,146	$67,864,292
Virginia					**$33,932,146**	**$67,864,292**

	Smart Grid Regional Demonstrations					
	HQ City	**Name of Primary Awardee**	**Project Title and Brief Project Description**	**Project Locations**	**Recovery Act Funding**	**Total Project Value Including Cost Share**
WA	Richland	Battelle Memorial Institute, Pacific Northwest Division	**Pacific Northwest Smart Grid Demonstration Project**- Spanning five states and affecting more than 60,000 consumers, demonstrate and validate new smart grid technologies and inform business cases; provide two-way communication between distributed generation, storage, and demand assets and the existing grid infrastructure; quantify smart grid costs and benefits; and advance interoperability standards and cyber security approaches.	Seattle, WA; Kennewick, WA; Fox Island, WA; Ellensburg, WA; Salem, OR; Airway Heights, WA; Milton Freewater, OR; Pullman, WA; Helena and Georgetown, MT; Idaho Falls, ID; Libby and Kalispell, MT; Jackson Hole and Afton, WY	$88,821,251	$177,642,503
Washington State					**$88,821,251**	**$177,642,503**
WI	Waukesha	Waukesha Electric Systems	**Fault Current Limiting Superconducting Transformer -**Demonstrate a Smart Grid-compatible Fault Current Limiting Superconducting Transformer for a utility substation, that will help improve the stability of the system. The proposed 28 megavolt amp utility transformer will occupy approximately 50% of the physical size/weight of a conventional transformer, lower power consumption through reduction of losses, and increase the reliability of the electrical grid.	Irvine, CA	$10,744,409	$21,548,821
Wisconsin					**$10,744,409**	**$21,548,821**
Regional Demo Totals					**$435,200,987**	**$877,241,878**

Energy Storage Demonstrations						
HQ State	**HQ City**	**Name of Primary Awardee**	**Project Title and Brief Project Description**	**Project Locations**	**Recovery Act Funding**	**Total Project Value Including Cost Share**
CA	Alameda	Primus Power Corporation	**Wind Firming EnergyFarm™** - Deploy a 25 MW - 75 MWh EnergyFarm for the Modesto Irrigation District in California's Central Valley, replacing a planned $78M / 50 MW fossil fuel plant to compensate for the variable nature of wind energy providing the District with the ability to shift on-peak energy use to off-peak periods.	Alameda, CA; San Ramon, CA; and Modesto, CA	$14,000,000	$46,700,000
	Berkeley	Seeo, Inc	**Solid State Batteries for Grid-Scale Energy Storage** - Develop and deploy a 25kWh prototype battery system based on Seeo's proprietary nanostructured polymer electrolytes. This new class of advanced lithium-ion rechargeable battery will demonstrate the substantial improvements offered by solid state lithium-ion technologies for energy density, battery life, safety, and cost. These batteries would be targeted for utility-scale operations, particularly Community Energy Storage projects.	Berkeley, CA and Van Nuys, CA	$6,196,060	$12,392,120
	Fremont	Amber Kinetics, Inc.	**Amber Kinetics Flywheel Energy Storage Demonstration**- Develop and demonstrate an innovative flywheel technology for use in grid-connected, low-cost bulk energy storage applications. This demonstration effort, which partners with Lawrence Livermore National Laboratory, will improve on traditional flywheel systems, resulting in higher efficiency and cost reductions that will be competitive with pumped hydro technologies.	Fremont, CA	$4,000,000	$10,000,000
	Rosemead	Southern California Edison Company	**Tehachapi Wind Energy Storage Project -** Deploy and evaluate an 8 MW utility-scale lithium-ion battery technology to improve grid performance and aid in the integration of wind generation into the electric supply. The project will evaluate a wider range of applications for lithium-ion batteries that will spur broader demand for the technology, bringing production to a scale that will make this form of large energy storage more affordable.	Tehachapi, CA	$24,978,264	$53,510,209
	San Francisco	Pacific Gas & Electric Company	**Advanced Underground CAES Demonstration Project Using a Saline Porous Rock Formation as the Storage Reservoir** - Build and validate the design, performance, and reliability of an advanced, underground 300 MW Compressed Air Energy Storage (CAES) plant using a saline porous rock formation located near Bakersfield, CA as the storage reservoir.	Kern County, CA	$25,000,000	$355,938,600
California					**$74,174,324**	**$478,540,929**
MA	North Reading	Premium Power Corporation	**Premium Power Distributed Energy Storage System Demonstration for National Grid and Sacramento Municipal Utility District -** Demonstrate competitively-priced, multi-megawatt, long-duration advanced flow batteries for utility grid applications. This three-year project incorporates engineering of fleet control, manufacturing and installation of seven 500-kW/6-hour TransFlow 2000 energy storage systems in California, Massachusetts, and New York to lower peak energy demand and reduce the costs of power interruptions.	North Reading, MA; Syracuse, NY; Everett, MA; Sacramento, CA; and Rancho Cordova, CA	$7,320,000	$16,080,554
	Tyngsboro	Beacon Power Corporation	**Beacon Power 20MW Flywheel Frequency Regulation Plant -- Chicago, IL -** Design, build, test, commission, and operate a utility-scale 20 MW flywheel energy storage frequency regulation plant in Chicago, Illinois, and provide frequency regulation services to the grid operator, the PJM Interconnection. The project will also demonstrate the technical, cost and environmental advantages of fast response flywheel-based frequency regulation management, lowering the cost to build a 20 MW flywheel energy storage plant to improve grid reliability while increasing the use of wind and solar power.	Tyngsboro, MA and Chicago, IL	$24,063,978	$48,127,957
Massachusetts					**$31,383,978**	**$64,208,511**
MI	Detroit	The Detroit Edison Company	**Detroit Edison's Advanced Implementation of A123s Community Energy Storage Systems for Grid Support -** Demonstrate the use and benefits of Community Energy Storage (CES) systems for utilities and test the ability to integrate secondary-use electric vehicle batteries as part of the CES demonstration. This project will install 20 CES units, 25kW/2hr each, into a system that includes a 1 MW storage device integrated into a solar system.	Detroit, MI; Northville, MI; Fairfax, VA; Blacksburg, VA; Auburn Hills, MI; and Hopkinton, MA	$4,995,271	$10,877,258
Michigan					**$4,995,271**	**$10,877,258**
NC	Charlotte	Duke Energy Business Services, LLC	**Notrees Wind Storage** - Deploy a wind energy storage demonstration project at the Notrees Windpower Project in western Texas. The project will demonstrate how energy storage and power storage technologies can help wind power systems address intermittency issues by building a 20 megawatt (MW) hybrid-energy storage system capable of optimizing the flow of energy.	Goldsmith, TX	$21,806,232	$43,612,464
North Carolina					**$21,806,232**	**$43,612,464**

Energy Storage Demonstrations						
HQ State	**HQ City**	**Name of Primary Awardee**	**Project Title and Brief Project Description**	**Project Locations**	**Recovery Act Funding**	**Total Project Value Including Cost Share**
NH	West Lebanon	SustainX, Inc.	**Demonstration of Isothermal Compressed Air Energy Storage to Support Renewable Energy Production**- Design, build, and deploy a utility-scale, low-cost compressed air energy storage system to support the integration of renewable energy sources onto the grid. The 1 MW/4hr system will store potential energy in the form of compressed air in above-ground industrial pressure facilities. The technology utilizes isothermal gas cycling coupled with staged hydraulic compression and expansion to deliver an efficient and cost-effective energy storage solution.	West Lebanon, NH; Hanover, NH; and Saxonville, MA	$5,396,023	$10,792,045
New Hampshire					**$5,396,023**	**$10,792,045**
NM	Albuquerque	Ktech Corporation	**Flow Battery Solution for Smart Grid Renewable Energy Applications**- Demonstrate a prototype flow battery system that can be grid connected, charged and discharged, and scaled to utility power levels. The project will combine a proven redox flow battery chemistry with a unique, patented design to yield an energy storage system that meets the combined safety, reliability, and cost requirements for distributed energy storage.	Albuquerque, NM; Sunnyvale, CA; and Snelling, CA	$4,764,284	$9,528,567
	Albuquerque	Public Service Company of New Mexico	**PV Plus Storage for Simultaneous Voltage Smoothing and Peak Shifting -** Demonstrate how a 2.8MWh Zinc-Bromine flow battery along with a sophisticated control system turns a 500kW solar PV installation. into a reliable, dispatchable distributed generation resource. This hybrid resource will mitigate fluctuations in voltage normally caused by intermittent sources such as PV and wind andsimultaneously store more energy for later use when customer demand peaks.	Albuquerque, NM	$1,755,931	$5,851,303
New Mexico Total					**$6,520,215**	**$15,379,870**
NY	Binghamton	New York State Electric & Gas Corporation	**Energy East Advanced CAES Demonstration Plant (150MW)Using an Existing Salt Storage Cavern -** Demonstrate an advanced, less costly 150 MW Compressed Air Energy Storage (CAES) technology plant using an existing salt cavern. The project will be designed with an innovative smart grid control system to improve grid reliability and enable the intergration of wind and other intermittent renewable energy sources.	Watkins Glen, NY	$29,561,142	$125,006,103
New York Total					**$29,561,142**	**$125,006,103**
OH	Painesville	City of Painesville	**Painesville Municipal Power Vanadium Redox Battery Demonstration Program -** Demonstrate 1 MW vanadium redox battery (VRB) storage system at the 32 MW municipal coal fired power plant in Painesville. The project will provide operating data and experience to help the plant maintain its daily power output requirement more efficiently while reducing its carbon footprint.	Painesville, OH; Johnstown, PA; Alexandria, VA; Evansville, IN; Devens, MA; and Parma, OH	$3,743,570	$7,487,153
Ohio Total					**$3,743,570**	**$7,487,153**
PA	Lyon Station	East Penn Manufacturing Co.	**Grid-Scale Energy Storage Demonstration for Ancillary Services Using the UltraBattery Technology** - Demonstrate the economic and technical viability of a 3MW grid-scale, advanced energy storage system using the lead-carbon UltraBattery technology to regulate frequency and manage energy demand. This project will entail the construction of a dedicated facility on the East Penn campus in Lyon Station, PA that will be used as a working energy storage demonstration for UltraBattery modules.	Lyons Station, PA	$2,245,523	$4,491,046
	Pittsburgh	44 Tech Inc.	**Demonstration of Sodium Ion Battery for Grid Level Applications**- Partner with Carnegie Mellon University to demonstrate a new, low cost, long-life, highly efficient, environmentally friendly, stationary energy storage battery that uses a proven and fully novel cell chemistry. Specifically, an aqueous sodium-ion based electrolyte is used in conjunction with simple highly scalable electrode materials housed in low cost packaging.	Pittsburgh, PA	$5,000,000	$10,000,000
Pennsylvania Total					**$7,245,523**	**$14,491,046**
Energy Storage Totals					**$184,826,277**	**$770,395,378**